

And that this was the surface of the Air that gave so vivid a *re-percussion* I try'd by this means. I sunk half of a *stiria* in Water, so that only Water was contiguous to the under surface, and then the internal reflection was so exceedingly faint, that it was scarce discernable. Again, I try'd to alter this vivid reflection by keeping off the Air, with a body not fluid, and that was by rubbing and holding my finger very hard against the under surface, so as in many places the pulp of my finger did touch the Glass, without any *interjacent* air between; then observing the reflection, I found, that wheresoever my finger or skin toucht the surface, from that part there was no reflection, but in the little furrows or creases of my skin, where there remain'd little small lines of air, from them was return'd a very vivid reflection as before. I try'd further, by making the surface of very pure Quicksilver to be contiguous to the under surface of this *pellucid* body, and then the reflection from that was so exceedingly more vivid than from the air, as the reflection from air was than the reflection from the Water; from all which trials I plainly saw, that the strong reflecting air was the cause of this *Phænomenon*.

And this agrees very well with the *Hypothesis* of light and *Pellucid* bodies which I have mention'd in the description of *Muscovy-glass*; for we there suppose Glass to be a *medium*, which does less resist the pulse of light, and consequently, that most of the Rays incident on it enter into it, and are refracted towards the *perpendicular*; whereas the air I suppose to be a body that does more resist it, and consequently more are *re-percuss'd* then do enter it: the same kind of trials have I made, with *Crystalline Glass*, with drops of fluid bodies, and several other ways, which do all seem to agree very exactly with this *Theory*. So that from this Principle well establish'd, we may deduce severall Corollaries not unworthy observation.

And the first is, that it plainly appears by this, that the production of the Rainbow is as much to be ascribed to the reflection of the concave surface of the air, as to the refraction of the *Globular* drops: this will be evidently manifest by these Experiments, if you *foliate* that part of a Glass-ball that is to reflect an *Iris*, as in the *Cartesian* Experiment, above mention'd, the reflections will be abundantly more strong, and the colours more vivid: and if that part of the surface be touch'd with Water, scarce affords any sensible colour at all.

Next we learn, that the great reason why *pellucid* bodies beaten small are white, is from the multitude of reflections, not from the particles of the body, but from the *contiguous* surface of the air. And this is evidently manifested, by filling the *Interstitia* of those powder'd bodies with Water, whereby their whiteness presently disappears. From the same reason proceeds the whiteness of many kinds of Sands, which in the *Microscope* appear to be made up of a multitude of little *pellucid* bodies, whose brightest reflections may by the *Microscope* be plainly perceiv'd to come from their internal surfaces; and much of the whiteness of it may be destroy'd by the affusion of fair Water to be contiguous to those surfaces.

The whiteness also of froth, is for the most part to be ascribed to the reflection